



BRAZOS ELECTRIC POWER COOPERATIVE, INC.
2404 LaSalle Ave. • PO Box 2585
Waco, Texas 76702-2585
Phone: (254) 750-6500
Fax: (254) 750-6292

SENT FEDERAL EXPRESS

July 31, 2012

TCEQ
Chief Clerk's Office
MC 105
PO Box 13087
Austin, Texas 78711-3087

**RE: Brazos Electric Power Cooperative, Inc.
Jack County Generation Facility – Jack 2 Expansion Project
CN600128821 / RN100221985
Account No. JA-0068-E
Permit No. 83801 / PSD-TX-117
FOP No. O-02169
Filing of Appeal for - Application for Use Determination for Pollution Control
Property Application # 16413**

Brazos Electric Power Cooperative, Inc. ("BEPC") on July 12, 2012 received a "Notice of Negative Use Determination" for the application number listed above. This letter is being submitted as a formal appeal to the negative use determination. The following information is provided, as required in section 30 Tex. Admin. Code § 17.25(b)(1-5), in support of BEPC's appeal:

1. Mike Meyers,
Brazos Electric Power Cooperative, Inc.
Manager, Environmental Services
2404 LaSalle Ave.
Waco, Texas 76706
Day Time Phone#: (254) 750-6228

2. Brazos Electric Power Cooperative, Inc.
Jack County Generation Facility
3844 Henderson Ranch Road
Bridgeport, Texas 76426

3. Application # 16413

4. BEPC respectfully requests Commission reconsideration of the negative use determination issued on July 10, 2012, and received by BEPC on July 12, 2012.

TEXAS
COMMISSION
ON ENVIRONMENTAL
QUALITY
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CHIEF CLERKS OFFICE

5. BEPC respectfully submits the following as its basis for appeal:

Without citing specific authority, the Texas Commission on Environmental Quality (hereafter the "TCEQ" or "Commission") Executive Director issued a negative use determination to BEPC on July 10, 2012, regarding Use Determination Application No. 16413.

The TCEQ Executive Director reasoned, "Heat recovery steam generators and associated dedicated ancillary equipment are used solely for production; therefore, are not eligible for a positive use determination." BEPC received notice of this determination on July 12, 2012. See Attachment A. This appeal is therefore timely filed.

BEPC respectfully requests that the Commission reconsider the use determination based on the following:

BEPC's Application Meets the Positive Use Determination Eligibility Requirements

BEPC's application meets the statutory and regulatory requirements for eligibility for a positive use determination. First, heat recovery steam generators ("HRSGs") are specifically listed in Tex. Tax Code § 11.31(k)(8) as "facilities, devices, or methods for the control of air, water, or land pollution." Second, HRSGs are included in the Expedited Review List set forth in 30 Tex. Admin. Code § 17.17. Third, BEPC's HRSG is equipment used, constructed or installed wholly or partly to meet or exceed laws, rules, or regulations adopted by an environmental protection agency of the United States, or the State of Texas or a political subdivision thereof. *See id.* at § 17.4(a). Fourth, BEPC's HRSG was acquired, constructed, installed, or replaced after January 1, 1994. *See id.* at § 17.4(a)(1). Finally, BEPC's HRSG was not taxable by any taxing unit in Texas on or before January 1, 1994. *See id.* at § 17.4(a)(3).

BEPC submitted the required application and fee. *See id.* at § 17.10(a). BEPC addressed each of the required elements in the application. *See id.* at § 17.10(d). A copy of BEPC's application, as filed on or about February 23, 2012, is attached. See Attachment B.

In accordance with the requirements of Chapter 17, BEPC included within its application a cost analysis procedure ("CAP"). The CAP utilizes a calculation to determine the creditable partial percentage that may be claimed for purposes of a positive use determination. BEPC's calculation supports BEPC's claim for a 74.66% positive use determination for its HRSG. TCEQ has not challenged BEPC's calculation under the CAP.

BEPC's application meets all of the statutory and regulatory requirements necessary to establish eligibility for a positive use determination, which would entitle BEPC to a 74.66% positive use determination. The TCEQ Executive Director has not asserted any error or deficiency in BEPC's application as the basis for its negative use determination.

BEPC's HRSG is an Air Pollution Control Device

HRSGs are expressly included in the TCEQ's Expedited Review List, which the TCEQ has classified as "a nonexclusive list of facilities, devices, or methods for the control of air, water and/or land pollution." *See id.* at § 17.17(b). As the TCEQ has noted, this list of equipment includes the equipment identified in Tex. Tax Code § 11.31(k), with changes as authorized by Tex. Tax Code § 11.31(l). *See id.* The Legislature has mandated that HRSGs be considered as air pollution control devices and the TCEQ has confirmed this status through its Chapter 17 rulemaking in 2008 and 2010.

As recently as March 2012, Region 5 ("EPA") confirmed that HRSGs are considered to be an air pollution control device. EPA reasoned that, because combined cycle turbines decrease emissions by increasing the efficiency of fuel burning equipment, a BACT analysis should consider these systems. *See* <http://epa.gov/nsr/ghgdocs/20120315Milwaukee.pdf>. EPA's conclusion that HRSGs represent control technology is further support for the Legislature's directive and BEPC's position in this appeal.

To the extent that the TCEQ has any authority to override the Legislature's directive with respect to the treatment of HRSGs as an air pollution control device, it may only do so through rulemaking. Tex. Gov't Code §§ 2001.003(6), .023, .024, .029. TCEQ's rules recognize that its ability to remove items from the Expedited Review List has been significantly limited by the Legislature, and that such a revision requires "compelling evidence to support the conclusion that the item does not render pollution control benefits." *See* 30 Tex. Admin. Code § 17.17(b). TCEQ has neither taken nor proposed such action. In the absence of such action, the TCEQ has no basis for asserting that BEPC's HRSG generates no pollution control benefits and that BEPC is therefore ineligible for a positive use determination with respect to this equipment.

TCEQ's Basis for its Negative Use Determination is Flawed

The sole basis given by the TCEQ Executive Director for the negative use determination is stated in the letter to BEPC, dated July 10, 2012: "Heat recovery steam generators and associated dedicated ancillary equipment are used solely for production; therefore, are not eligible for a positive use determination." As noted above, this statement is directly contrary to the findings of the Legislature, and to the determination of the TCEQ itself, as evidenced by its rulemakings in 2008 and 2010.

The Legislature's mandate, further implemented by the TCEQ, is consistent with the dual function of an HRSG, which: (1) captures waste heat of combustion which would otherwise be emitted, with significant associated emissions of NOx and other air contaminants; and (2) utilizes this recovered heat to produce steam, which in turn powers a steam turbine-generator set to produce additional electrical power beyond that which would occur using traditional technology. The TCEQ's recognition of these dual purposes serves at the basis, at least in part, for the CAP included in 30 Tex. Admin. Code § 17.17, which provides a mechanism by which the TCEQ can quantify the percentage of the expenditure that should be attributed to the pollution control purpose of an HRSG that is eligible for a positive use determination.

The TCEQ Executive Director's statement that HRSGs are used solely for production is not supported by any evidence. In fact, the TCEQ's historical treatment of HRSGs is directly contrary to such a statement, as the TCEQ has previously granted 100% positive use determinations to approximately 25 HRSGs. Without any evidence supporting its bald assertion, the TCEQ Executive Director's negative use determination is arbitrary and capricious, and should be overturned.

TCEQ's Negative Use Determination Appears One of Universal Application re HRSGs

At the same time that the TCEQ Executive Director issued the negative use determination to BEPC, he issued several other use determinations involving HRSGs. BEPC understands that, in each case, the determination was a negative use determination with respect to the HRSG.

If the TCEQ intends to treat HRSGs as ineligible for positive use determinations, as it appears by recent events, it must do so by rulemaking. The Texas Administrative Procedures Act ("APA") defines a "rule" as "a state agency statement of general applicability that implements, interprets, or prescribes law or policy; or describes the procedure or practice requirements of a state agency." Tex. Gov't Code § 2001.003(6). A rule under the APA "includes the amendment or repeal of a prior rule." *Id.* Before a rule can be adopted, a state agency must provide notice and an opportunity for public comment. *Id.* at §§ 2001.023, .024, .029.

As noted above, in the context of Tex. Tax Code § 11.31, the TCEQ Executive Director's threshold for conducting such a rulemaking is higher than is normally the case. The Legislature has mandated that such a rulemaking must be based on compelling evidence to support the conclusion that the item does not render pollution control benefits. *See* Tex. Tax Code § 11.31(k). TCEQ has not proposed rulemaking and its recent series of negative use determinations, even as ad hoc rulemaking, are not supported by any evidence, much less compelling evidence to support a conclusion that HRSGs do not render pollution control benefits. Therefore, TCEQ Executive Director's apparent intent to treat HRSGs as ineligible for positive use determinations is arbitrary and capricious, and should be overturned.

Conclusion

Based on the foregoing, BEPC respectfully requests that the Commission reconsider the negative use determination issued by TCEQ Executive Director with respect to BEPC's application and that, following such reconsideration, the Commission direct the Executive Director to grant a 74.66% positive use determination for BEPC's HRSG, as reflected in Use Determination Application No. 16413.

In addition, given the short time allowed for providing this response to the negative use determination, BEPC respectfully requests the opportunity to supplement this filing with any additional materials that may be relevant to the Commission's consideration of the appeal. It is BEPC's understanding that it will have an opportunity to reply to any response that may be filed by the Executive Director or the tax appraisal district.

TCEQ
Chief Clerk's Office
MC 105
July 26, 2012
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If additional information is needed, please feel free to contact me at (254) 750-6228 or by email at mmeyers@brazoselectric.com.

Sincerely,



Mike Meyers, ADR
Manager, Environmental Services
Risk & Compliance Division

JAC-01-AIR-1200-02
mm
Attachments

cc: Clifton Karnei – BEPC Executive Vice President and General Manager
Khaki Bordovsky – BEPC Vice President Service
Josh Clevenger – Vice President of Power Supply and Generation
Mark Fagan – BEPC Chief Risk Officer
Jeff Nottingham - Jack County Plant Manager
Jim Harris
H&H Associates
406 FM 3016
Grapeland, Texas 75844
Paul Sarahan
Fulbright & Jaworski
98 San Jacinto Boulevard, Suite 1100
Austin, Texas 78701-4255

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Chief Clerk's Office
MC 105
July 26, 2012
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Attachment A

Bryan W. Shaw, Ph.D., *Chairman*
Carlos Rubinstein, *Commissioner*
Toby Baker, *Commissioner*
Zak Covar, *Executive Director*



Received
7-12-12

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 10, 2012

Mr. Jim Harris
Tax Agent
H & H Associates
406 FM 3016
Grapevine, Texas 75844

Re: Notice of Negative Use Determination
Brazos Electric Cooperative, Inc.
Jack County Generation Facility
3844 Henderson Ranch Rd
Bridgeport (Jack County)
Regulated Entity Number: RN100221985
Customer Reference Number: CN600128821
Application Number: 16413

Dear Mr. Harris:

This letter responds to Brazos Electric Cooperative, Inc.'s Application for Use Determination, received March 7, 2012, pursuant to the Texas Commission on Environmental Quality's (TCEQ) Tax Relief for Pollution Control Property Program for the Jack County Generation Facility.

The TCEQ has completed the review for application #16413 and has issued a Negative Use Determination for the property in accordance with Title 30 Texas Administrative Code (TAC) §17.4. The justification for the negative use determination is provided below.

Heat recovery steam generators and associated dedicated ancillary equipment are used solely for production; therefore, are not eligible for a positive use determination.

Please be advised that a Negative Use Determination may be appealed. The appeal must be filed with the TCEQ Chief Clerk within 20 days after the receipt of this letter in accordance with 30 TAC §17.25.

If you have questions regarding this letter or need further assistance, please contact Ronald Hatlett of the Tax Relief for Pollution Control Property Program by telephone at (512) 239-6348, by e-mail at Ronald.Hatlett@tceq.texas.gov, or write to the Texas Commission on Environmental Quality, Tax Relief for Pollution Control Property Program, MC-110, P.O. Box 13087, Austin, Texas 78711-3087.

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Chief Clerk's Office
MC 105
July 26, 2012
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Attachment B



Attachment B

BRAZOS ELECTRIC POWER COOPERATIVE, INC.
2404 LaSalle Ave. - PO Box 2585
Waco, Texas 76702-2585
Phone: (254) 750-6500
Fax: (254) 750-6292

CERTIFIED MAIL # 7008 1830 0001 0757 5761
RETURN RECEIPT REQUESTED

February 23, 2012

Cashiers Office, MC 214
Tax Relief Program
TCEQ
PO Box 13088
Austin, Texas 78711-3088

RE: Brazos Electric Power Cooperative, Inc.
Jack County Generating Facility – Jack 2 Expansion Project
CN600128821 / RN100221985
Account No. JA-0068-E
Permit No. 83801 / PSD-TX-117
FOP No. O-02169
Application for Use Determination for Pollution Control Property

Brazos Electric Power Cooperative, Inc. (BEPC) is submitting the attached "Application for Use Determination for Pollution Control Property" on TCEQ Form #00611. This submittal is for new pollution control property, Heat Recovery Steam Generators and Dedicated Ancillary Systems (HRSG3 and HRSG4) on the Expedited Review List #B-8 installed as part of the Jack County Generation Facility, Jack 2 Expansion Project. Also included is a check to cover the \$2500 application fee for a Tier III use determination, BEPC Check # _____. The following attachments are included:

1. Application for Use Determination Section 9.11-13 Description/Explanation
2. Jack County Process Flow Diagram
3. Jack County – Jack 2 Plot Plan
4. Partial use Determination Calculation Methodology

If additional information is needed, please feel free to contact me at (254) 750-6228 or by email at mmeyers@brazoselectric.com.

Cashiers Office, MC 214
Tax Relief Program
TCEQ
February 23, 2012
Page 2

Sincerely,

A handwritten signature in black ink that reads "Mike Meyers". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Mike Meyers, ADR
Manager, Environmental Services
Risk & Compliance Division

JAC-01-AIR-1200-02
mm
Attachment

cc: Clifton Karnei – BEPC Executive Vice President and General Manager
Khaki Bordovsky – BEPC Vice President Service
Josh Clevenger – Vice President of Power Supply and Generation
Mark Fagan – BEPC Chief Risk Officer
Jeff Nottingham - Jack County Plant Manager
Jim Harris – H&H Associates 406 FM 3016 Grapeland, Texas 75844

TCEQ
Cashiers Office, MC 214
Tax Relief Program
February 23, 2012
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BEPC Check #

staple check here

Texas Commission on Environmental Quality

Use Determination for Pollution Control Property Application

A person seeking a use determination must complete this application form. For assistance in completing the application form please refer to the *Instructions for Use Determination for Pollution Control Property Application Form TCEQ-00611*, as well as the rules governing the Tax Relief Program in Title 30 Texas Administrative Code Chapter 17 (30 TAC 17). Information relating to completing this application form is also available in the TCEQ regulatory guidance document, *Property-Tax Exemptions for Pollution Control Property, RG-461*. For additional assistance, please call the Tax Relief Program at 512-239-4900.

You must supply information for each field of this application form unless otherwise noted.

Section 1. Eligibility

1. Is the property/equipment subject to any lease or lease-to-own agreement? Yes ☐ No ☒
2. Is the property/equipment used solely to manufacture or produce a product or provide a service that prevents, monitors, controls, or reduces air, water or land pollution?
Yes ☐ No ☒
3. Was the property/equipment acquired, constructed, installed, or replaced before January 1, 1994? Yes ☐ No ☒

If the answer to any of these questions is 'Yes', then the property/equipment is not eligible for a tax exemption under this program.

Section 2. General Information

1. What is the type of ownership of this facility?

Corporation ☒
Sole Proprietor ☐

Partnership ☐
Limited Partner ☐

Utility ☐
Other: ☐

2. Size of Company: Number of Employees

1 to 99 ☐
100 to 499 ☒

500 to 999 ☐
1,000 to 1,999 ☐

2,000 to 4,999 ☐
5,000 or more ☐

3. Business Description: (Briefly describe the type of business or activity at the facility)

Electric Power Generation and Transmission Cooperative

4. Provide the North American Industry Classification System (NAICS) six-digit code for this facility. 221112

Section 3. Type of Application and Fee

1. Select only one:

Tier I – Fee: \$150 ☐

Tier II – Fee: \$1,000 ☐

Tier III – Fee: \$2,500 ☒

2. Payment Information:

Check/Money Order/Electronic Payment Receipt Number: xxxxxx

Payment Type: Check

Payment Amount: 2500

Name on payment: TCEQ

Total Amount: 2500

NOTE: Enclose a check, money order to the TCEQ, or a copy of the ePay receipt along with the application to cover the required fee.

Section 4. Property/Equipment Owner Information

1. Company Name of Owner: Brazos Electric Power Cooperative, Inc.
2. Mailing Address: 2404 LaSalle Ave. ; PO Box 2585
3. City, State, Zip: Waco, Texas, 76702-2585
4. Customer Number (CN): 600128821
5. Regulated Entity Number (RN):100221985
6. Is this property/equipment owned by the CN listed in Question 4? Yes ☒ No ☐
If the answer is 'No,' please explain:
7. Is this property/equipment leased from a third party? Yes ☐ No ☒
If the answer is 'Yes,' please explain:
8. Is this property/equipment operated by the RN listed in Question 5? Yes ☒ No ☐
If the answer is 'No,' please explain:

Section 5. Name of Property/Equipment Operator (If different from Owner)

1. Company Name:
2. Mailing Address:
3. City, State, Zip:
4. Customer Number (CN):
5. Regulated Entity Number (RN):

Section 6. Physical Location of Property/Equipment

1. Name of Facility or Unit where the property/equipment is physically located: Jack County Generation Facility
2. Type of Mfg. Process or Service: Electric Power Generation

3. Street Address: 3844 Henderson Ranch Road
4. City, State, Zip: Bridgeport, Texas, 76426

Section 7. Appraisal District with Taxing Authority

1. Appraisal District: Jack County
2. District Account Number(s):

Section 8. Contact Name

1. Company Name: H&H Associates
2. First Name of Contact: Jim
3. Last Name of Contact: Harris
4. Salutation: Mr. ☒ Mrs. ☐ Ms. ☐ Dr. ☐ Other:
5. Title: President
6. Mailing Address: 406 FM 3016
7. City, State, Zip: Grapeland, Texas, 75844
8. Phone Number/Fax Number: (936) 687-4230 / (936) 687-9064
9. Email Address: h-h@hughes.net
10. Tracking Number (optional):

Section 9. Property/Equipment Description, Applicable Rule, and Environmental Benefit

For each piece, or each category, of pollution control property/equipment for which a use determination is being sought, answer the following questions.

Attach additional response sheets to the application for each piece of integrated pollution control property/equipment if a use determination is being sought for more than one (1) piece.

General Information

1. Name the property/equipment: Jack 2 Heat Recovery Steam Generators (HRSG3/HRSG4) and Dedicated Ancillary Systems
2. Is the property/equipment used 100% as pollution control equipment? Yes ☐ No ☒
If the answer is 'Yes,' explain how it was determined that the equipment is used 100% for pollution control:
3. Does the property/equipment generate a Marketable Product? Yes ☒ No ☐
If the answer is 'Yes,' describe the marketable product: Electric Power
4. What is the appropriate Tier I Table or Expedited Review List number? B-8
5. Is the property/equipment integrated pollution control equipment? Yes ☒ No ☐
If the answer is 'No,' separate applications must be filed for each piece of property/equipment.

6. List applicable permit number(s) for the property/equipment: Jack 2 - 83801/PSD-TX-1117
; Title V O-02169

Incremental Cost Difference

7. Is the Tier I Table percentage based on the incremental cost difference? Yes ☐ No ☒

If the answer is 'Yes,' answer the following questions:

8. What is the cost of the new piece of property/equipment?
9. What is the cost of the comparable property/equipment?
10. How was the value of the comparable property/equipment calculated?

Property/Equipment Description

11. Describe the property/equipment. (What is it? Where is it? How is it used?) See Attachment
1

Applicable Rule

12. What adopted environmental rule or regulation is being met by the construction or
installation of the property/equipment? The citation must be to the subsection level. See
Attachment 1

Environmental Benefit

13. What is the anticipated environmental benefit related to the construction or installation of
the property/equipment? See Attachment 1

Section 10. Process Flow Diagram (Optional)

Attach documentation to the application showing a Process Flow Diagram for the
property/equipment.

Section 11. Partial-Use Percentage Calculation

This section must be completed for all Tier III applications. Attach documentation to the
application showing the calculations used to determine the partial-use percentage for the
property/equipment.

Section 12. Property Categories and Costs

List each piece of property/equipment of integrated pollution control property/equipment for
which a use determination is being sought.

Property/Equipment Name	Tier 1 Table No. or Expedited Review List No.	Use Percent	Estimated Dollar Value
Land:			
Property: Jack 2 - Heat Recovery Steam Generators and Dedicated Ancillary Sys	B-8	74.66	\$105,244,426

Property:			
Property:			
Total:			\$78,573,042

Attach additional response sheets to the application if more than three (3) pieces.

NOTE: Separate applications must be filed for each piece of nonintegrated pollution control property/equipment.

Section 13. Certification Signature

Must be signed by owner or designated representative.

By signing this application, I certify that I am duly authorized to submit this application form to the TCEQ and that the information supplied here is true and accurate to the best of my knowledge and belief.

Printed Name: Mike Meyers

Date:

Signature:

Mike Meyers

3/5/2012

Title: Manager, Environmental Services

JAC

Company Name: Brazos Electric Power Cooperative, Inc.

Under Texas Penal Code 37.10, if you make a false statement on this application, you could receive a jail term of up to one year and a fine up to \$2,000, or a prison term of two to 10 years and a fine of up to \$5,000.

Application Submission

Send the completed application and the appropriate fee, along with a complete copy of the completed application for the appraisal district, to:

U.S. Mail

Cashiers Office, MC 214
Tax Relief Program
TCEQ
PO Box 13088
Austin TX 78711-3088

Physical Address

Cashier's Office, MC 214
Building A
TCEQ
12100 Park 35 Circle
Austin TX 78753

Brazos Electric Power Cooperative, Inc.
Jack County Generation Facility
HRSG – B-8

Pollution Control Property/Equipment Use Determination

Attachment 1

9.11. Describe the property. (What is it? Where is it? How is it used?)

The pollution control property described in this application is the heat recovery steam generators (HRSGs) and dedicated ancillary systems (PC Property) installations.

Jack County - Jack 2 Expansion Project – HRSG3 and HRSG4

The Jack 2 expansion project consists of a set of a combined-cycle power plant with (2) gas combustion turbines (CTs) equipped with (2) heat recovery steam generators (HRSG3 and HRSG4) and dedicated ancillary systems necessary to capture heat from the CTs exhaust and convert it into electrical power. The HRSGs are installed at the exit of the CTs to capture and utilize the waste heat of combustion from the CTs exhaust gas and utilizes this waste heat to produce steam, which in turn powers a steam turbine-generator set to produce electrical power at the Facility in addition to the electrical power generated by the CTs alone.

The Facility gains both production and pollution control benefits from the subject PC Property. First, the use of this waste heat of combustion by the HRSGs create a thermal efficiency benefit for the Facility. Specifically, the use of waste heat from the CT exhaust gas results in the conversion of some of 50-55% of the chemical energy of the natural gas utilized at the Facility into electricity (HHV basis), a gain over the approximately 36% efficiency of the CTs alone use of the fuel in a simple cycle gas turbine (Brayton Cycle). Secondly, due to this efficiency gain, the Facility is able to generate fewer emissions (particularly NOx emissions) than a traditional power generation facility utilizing a single thermodynamic cycle; and allowing the subject PC Property to appear on the Expedited Review List.

9.12. What adopted environmental rule or regulation is being met by the construction or installation of this property?

The Pollution Control Property (PC) was installed to meet the requirements of 40 CFR Part 60.44da(a) "Standards for nitrogen oxides (NOX) for Electric Utility Steam Generating Units for new source performance standards (NSPS).

As well, the PC Property allows emissions to meet or exceed best available control technology (BACT) emission limitations established in federal operating permit # O-2169. Per 30 Texas Administration Code (TAC) §122.143(4), the permit holder must comply with all terms and conditions codified in the permit and any provisional terms and conditions required to be oncluded with the permit.

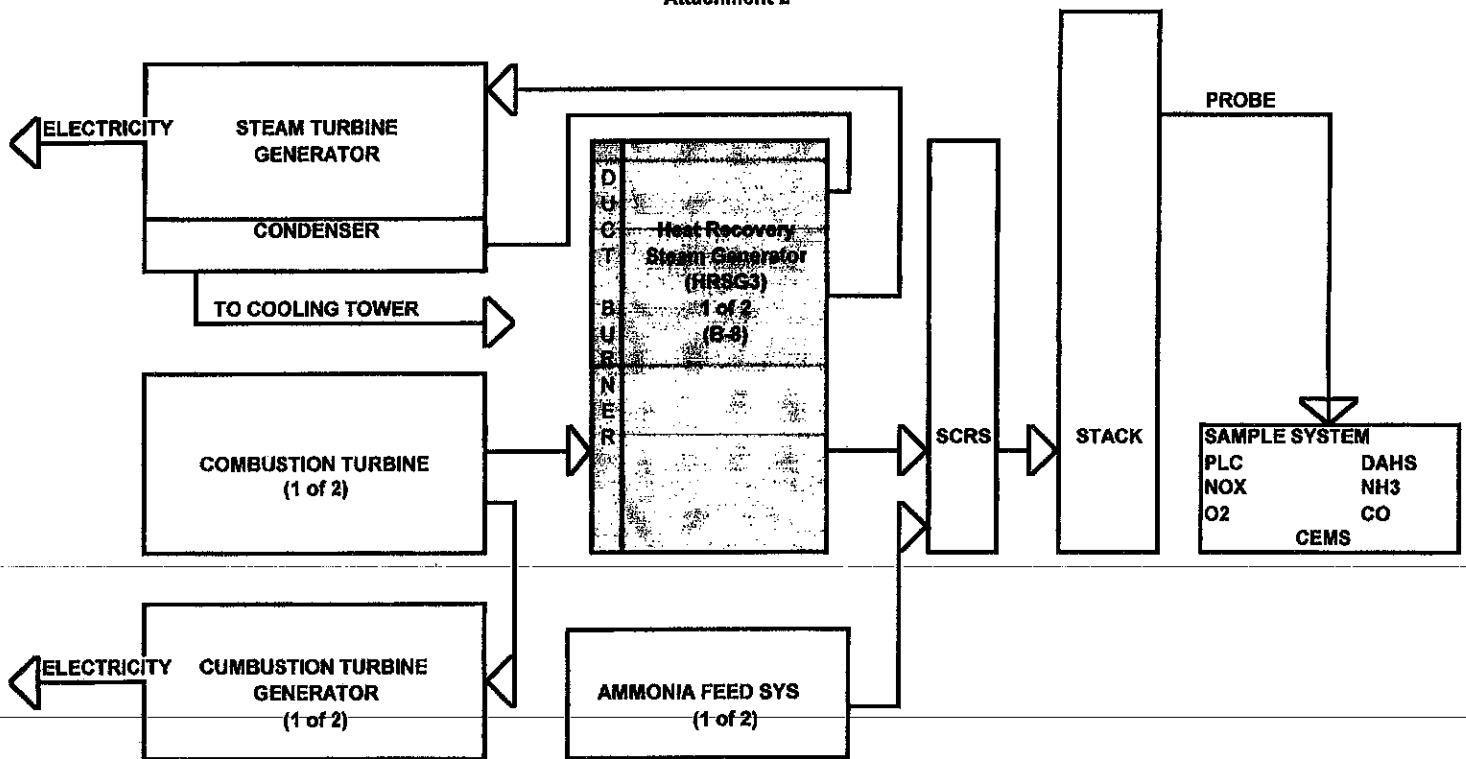
Attachment 1 cont'

9.13. What is the anticipated environmental benefit related to the construction or installation of the property?

The PC Property reduces the formation of and/or controls the emission of NOx and other air emissions associated with the combustion of natural gas used in combined cycle power generation at the Facility. Since less fuel is required per kilowatt of power produced, less exhaust gas emissions (NOx, CO, CO2) are emitted. Therefore, the HRSG's primary purpose of capturing and converting waste heat from the combustion turbine results in meaningful environmental benefits.

See Attachment 4 for calculation methodology used to calculate the partial use determination per requirements of TCEQ Pub. No. RG-461.

Brazos Electric Power Cooperative, Inc.
Jack County Generation Facility
Jack 2
Pollution Control Equipment Use Determination Document
Attachment 2



Note: Flow Diagram for CT and HRSG is same for CT4/HRSG4 arrangement.

Attachment 4

TCEQ Use Determination Application Section 11 user:

Company: Brans Electric Power Cooperative, Inc.
 Plant: Jack County Generation Facility
 Unit: Jack 2 - 600 MW 2 x 1 Configuration Combined Cycle Power Plant (2011)
 Address: Bridgeport, Texas
 Project: Tier III Cost Analysis Procedure
 Date: 10 Feb-12

I. Assumptions

Pollution Control Property (PC)	Input Variable	Source	Conversion Factors
Property Cost:	\$105,244,426.00	BEC Accting	h/yr 8,760
Capital Cost (\$/KW):	375.87	PC/TC	kw/MW 1,000
Total Capacity (MW):	600	2 (CT1, CT2, ST)	h/kg 2.2
CT1 Capacity (MW):	150	BEC 2010 RUS Form 12	\$/hr 3,600
CT2 Capacity (MW):	150	BEC 2010 RUS Form 12	blu/MMBtu 1,000,000
ST Capacity (MW):	280	BEC 2010 RUS Form 12	
2010 Net Annual ST Energy Production (kWh):	1,308,271,000	BEC 2010 RUS Form 12	
2010 Net Annual ST Energy Production (MWh):	1,308,271	BEC 2010 RUS Form 12	
2010 ST Capacity Factor:	53.3379%	Energy/(TC * 8760)	
2010 Net Plant Heat Rate (Btu/kWh):	6,900	Design	
2010 Net Plant Heat Rate (MMBtu/kWh):	0.006900	NPHR/BEC	
2010 Operating Hours	7,643	BEC 2010 RUS Form 12	
Capital Cost Old:	0		
Comparable Technology Cost:	0		
Comparable Technology:	0		
Design Capacity Factor:	0		
Capacity (MW):	1		

A. Cost Analysis Procedure

$$A. \text{ [Production Capacity Factor} \times \text{Capital Cost New]} - \text{Capital Cost Old} = \text{Marketable Product Value}$$

B. Cost Analysis Procedure Formulas (TCEQ)

$$\text{Partial Use Determination} \\ \text{[Production Capacity Factor} \times \text{Capital Cost New]} - \text{Capital Cost Old} = \text{Marketable Product Value}$$

$$\text{where: Marketable Product Value} = \sum_{t=1}^n \frac{\text{Marketable Product Value} - \text{Production Cost}}{(1 + \text{Interest Rate})^t}$$

n = estimated useful life in years of years equipment
 t = year one
 Interest Rate = 10%

C. Cost Analysis Procedure for Pollution Control Property

Marketable Product Value = Electricity Price (\$/MWh) x MWh per Year
 Direct Cost of Production = Unlevered Cost of Energy x kWh per Year

$$\text{LCOE (\$/kWh)} = \frac{\text{Capital Cost} \times \text{Capital Recovery Factor} + \text{Fixed O\&M Costs}}{\text{Hours per Year} \times \text{Capacity Factor}} + \frac{\text{Fuel Cost} \times \text{Heat Rate}}{\text{Capacity Factor}} \\ \text{LCOE (\$/kWh)} = \frac{\text{(\$105,244,426.00)} \times \text{10.51\%}}{\text{8,760} \times \text{600}} + \frac{\text{(\$4,109,015.87)}}{\text{8,760} \times \text{600}} \\ \text{LCOE (\$/kWh)} = \frac{\text{(\$11,194,349.59)}}{\text{5,256,000}} + \frac{\text{(\$0.0117)}}{\text{600}} \\ \text{LCOE (\$/kWh)} = \text{\$2.13} + \text{\$0.00195} = \text{\$2.13195}$$

Economic Assumptions	Input Variable	Source
Discount Rate (%)	10.00%	Standard project rate
Periods	30	RUS depreciation
PC Property Fixed O&M Cost (\$)	\$6,805,094.00	BEC 2010 RUS Form 12
CT1 Fixed O&M Costs (\$)	\$2,348,009.07	Formula
CT2 Fixed O&M Costs (\$)	\$2,348,009.07	Formula
ST Fixed O&M Costs (\$)	\$4,109,015.87	Formula
Fuel Cost (\$/MMBtu)	\$4.07	Note 1
PC property Variable Cost (\$/MWh)	\$5.00	Based with CSE
PC property Variable Cost (\$/kWh)	\$0.0050	Formula
ERCOT N. Zone Price (\$/MWh)	\$41.92	Note 2
Interest Rate (%)	10.00%	

Note 1: Average cost for fuel (2009 - 2011) weighted by monthly steam turbine generation

Note 2: Average Settlement Point price for resource weighted by hourly steam turbine generation, reflected by North Load Zone Market Clearing Price for Energy (MCPE) for Jan 1, 2009 - Nov 30, 2010 and Real-time Resource Settlement Point Price (RTP) for Dec 1, 2010 - Dec 31, 2011.

Levelized Cost of Energy (LCOE) Model Outputs

Capital Recovery Factor (%)	10.81%
LCOE (\$/kWh)	\$0.03976

Attachment 4, cont'

III. Cost Analysis Procedure Calculations For Jack County (Jack 2) HRSG3 and HRSG4

Formula: $(PCF \times CCN) - CCO - NPVMP$
CCN

A. Marketable Product Value (MPV)

$$\begin{array}{rcl} \text{Electricity Price} & \times & \text{Plant MWh} \\ \$41.92 & \times & 1,308,271 \\ \hline & & = \$54,842,720.32 \\ & & \text{NPVMP} \end{array}$$

B. Production Cost (PC)

$$\begin{array}{rcl} \text{Levelized Cost of Energy (LCOE)} & \times & \text{Plant MWh} \\ \$0.03976 & \times & 1,308,271,000 \\ \hline & & = \$52,013,439.95 \end{array}$$

Net Present Value Marketable Product (NPVMP) Calculation

$$\begin{array}{rcl} \sum_{t=1}^n \frac{(\text{Product Value} - \text{Production Cost})}{(1 + \text{Interest Rate})^t} & = & \text{NPVMP (\$)} \\ \sum_{t=1}^n \frac{\$54,842,720.32 - \$52,013,439.95}{1.10} & = & \text{NPVMP} \\ & & \$26,671,384.03 \end{array}$$

C. Production Capacity Factor (PCF)

$$\begin{array}{rcl} \frac{\text{Production Capacity of Existing Equipment or Process}}{\text{Production Capacity of New Equipment or Process}} & = & \text{PCF} \\ \frac{0}{300 \text{ MW} \times 58.21\%} & = & \text{PCF} \\ & & 1.00 \end{array}$$

D. Capital Cost New (CCN)

$$\begin{array}{rcl} \text{Pollution Control Property (PC)} & = & \text{CCN} \\ & & \$105,244,426.00 \end{array}$$

E. Capital Cost Old (CCO)

$$\begin{array}{rcl} \text{Comparable Technology} & = & \text{CCO} \\ & & \$0.00 \end{array}$$

Partial Use Determination Calculation

$$\begin{array}{rcl} \frac{(\text{PCF} \times \text{CCN}) - \text{CCO} - \text{MP}}{\text{CCN}} & = & \text{Partial Use Determination \%} \\ \frac{\$105,244,426.00 - \$0.00 - \$26,671,384.03}{\$105,244,426.00} & = & 76.66\% \end{array}$$

TCOQ Use Determination Application Section 11.1(a)		
Use Percent		76.66%
Estimated Dollar Value		\$105,244,426.00

$$\begin{array}{rcl} \text{Eligible HRSG Costs} & = & \$76,573,041.97 \\ (\text{Partial Use Determination \%} \times \text{PC Property}) & & \end{array}$$